

Remarks

Claims 1 to 10 are pending in this application of which claims 1, 6 and 10 are in independent form. Claim 6 is amended.

In paragraphs 1 and 3, the Office rejected claims 1 to 5 and 8 to 10 as being unpatentable over United States Patent 6,170,461 to Pursifull in view of the general knowledge in the art.

Pursifull discloses an electronic throttle plate for an engine whose construction design allows it to pass the maximum airflow position. In the "background of the invention" section, Pursifull also describes a configuration in which the throttle plate passes the closed throttle position, that is, the minimum air flow position. This is considered problematic since such a position is not accompanied by a lower stop of the throttle plate and thus has to be adaptively learned as the components are subject to wear and manufacturing tolerances (column 1, line 63, to column 2, line 6). Pursifull does not, as acknowledged by the Office, describe how this position of minimal airflow can be learned.

However, the view was expressed that it is obvious to accomplish the adaptive learning process for the determination of the position of the throttle plate with minimal airflow by measuring the air stream or a variable representing the air stream close to the expected minimal position. It was also considered obvious to perform such a measurement during an operation of the motor in which the throttle valve is essentially closed, as, for example, during idling or overrun operations.

Applicants note that claim 1 requires:

"A method for determining an impact-free extremal set position of an actuating member of an internal combustion engine

. . . .
providing an operating state of said engine substantially independent of said set position" (emphasis added)

Claim 10 contains similar language.

Applicants submit that the claimed invention, as the emphasis above supports, is not directed to providing an operating state for the determination of an impact-free extremal set position in which, as the Office suggests, the actuating member is in a substantially closed position. Rather the claimed invention provides an operating state of the engine substantially independent of the set position of the actuating member, that is, in which the set position of the actuating member is irrelevant. As a result, the execution of the method of the present invention does not influence the operation of the engine. Applicants note that Pursifull neither indicates nor suggests this feature of the present invention. Thus, in contrast to the Office's argument on page 3 of the Office Action, it is entirely possible that the adaptive learning process of Pursifull is performed in a workshop and not during normal engine operating conditions, that is, while an operating state, such as idling or overrun operation, is provided.

In addition, applicants submit that Pursifull's general teaching of the adaptive learning of the position of the throttle plate with minimum air flow does not force a conclusion as to how this adaptive learning is accomplished. This is particularly

true if there are, as described in the background section of the present disclosure, several alternative adaptive learning processes. As discussed on page 2, lines 23 to 25, of the specification, in a through-plunging throttle flap, only the lower mechanical stop can be learned, which, however, is of no consequence during normal driving operation. When the position of the throttle flap with minimal air leakage is known in relation to the lower mechanical stop, learning of this lower mechanical stop allows an inference as to the position of the throttle flap with minimal air flow. That means, by learning the lower mechanical stop, one can learn the position of the throttle flap with minimal air flow. The fact that the lower mechanical stop should not be approached during normal operating conditions supports that such an adaptive learning of the position of the throttle flap with minimum air flow, which is based on the adaption of the lower mechanical stop, is performed on a test bench in a workshop as discussed above and not under normal operating condition of the engine, that is, not while an operating state, for example in idling or overflow operation, is provided.

In view of the above, applicants submit that when Pursifull indicates in column 2, lines 4 to 8, that the position of the throttle plate with minimum air flow has, in case of a through-plunging throttle plate, to be adaptively learned, it can, absent any indication to the contrary, be assumed that this learning process is performed using the prior art methods disclosed on page 2, lines 23 to 25, of the present disclosure.

However, the presently claimed invention allows for a more

comfortable way of determining the impact-free extremal set position of an actuating member. In particular, this determination can be performed under normal operating conditions without the need to call on a workshop.

Applicants submit that Pursifull in combination with the general knowledge in the art does not teach or suggest all the claim limitations as required for a prima facie case of obviousness (MPEP §2142). Applicants further submit that there is no suggestion or motivation, either in the Pursifull or in the knowledge generally available to one of ordinary skill in the art, to modify Pursifull's teachings to arrive at the presently claimed invention. Finally, applicants submit that there is no reasonable expectation of success (MPEP §2142).

Applicants note that the Office did not provide any documentary evidence to support the view that the features missing from Pursifull are obvious to a person skilled in the art. Applicants further note that facts should be only asserted/treated to be well-known or to be common knowledge in the art if they are capable of instant and unquestionable demonstration as being well known (MPEP §2144.03). Applicants submit that, as shown above, the features missing from Pursifull do not fall into this category. Accordingly, applicants respectfully request that, if the above rejections are maintained, the Office provides applicants with appropriate reference(s).

However, applicants submit that they have shown above that claims 1 and 10 are patentable over the cited prior art and thus should be allowable. Accordingly, claims 2 to 5, 8 and 9, which

are dependent on claim 1 should also be allowable.

Applicants note with appreciation that claims 6 and 7 were found to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. Applicants have appropriately amended claim 6 which should now be allowable. Claim 7, which is dependent on claim 6, should also be allowable.

Reconsideration of the application is respectfully requested.

Respectfully submitted,



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Date: December 7, 2004